

**REMARKS**

New claims 10 and 11 have been added. Support for new claims can be found in the as-filed specification, e.g., paragraph [0022]. Claims 1-3, 5-7, and 9-11 are currently pending.

Applicant respectfully requests reconsideration of the rejection of claims 1-3, 5-7, and 9 under 35 U.S.C. § 103(a) based on JP 10-088361 to Asakura et al. ("Asakura") in view of U.S. Patent No. 5,803,131 to Iwasa et al. ("Iwasa"), U.S. Patent No. 4,437,999 to Mayne ("Mayne"), JP 11-244360 to Hattori et al. ("Hattori"), and JP 55-145620 to Inoue ("Inoue") for at least the following reasons.

Each of claims 1 and 5 recites, among other things, "irradiating a resin material with ultraviolet rays when said resin material is in contact with [a] first solution . . . [containing] ozone in an organic or inorganic polar solvent other than water . . . wherein the resin material irradiated by the ultraviolet rays while in contact with the first solution lacks a surface having prior roughening."

The Office Action acknowledged that Asakura does not teach that "UV treatment is done while [a] resin material is in contact with a first solution containing ozone and a specific solvent as claimed." Office Action, page 4. The Office Action relied on Iwasa and Mayne and asserted that "[i]t would have been obvious . . . to modify Asakura to further provide that the resin material is in contact with an ozone solution as suggested by Iwasa and Mayne during the UV irradiation to provide a beneficial increased oxidation rate for speedy processing, as Asakura and Iwasa both teach the desire to oxidize resin surfaces before electroless plating, using UV treatment and an ozone solution, respectively, and Mayne [teaches] that the combination of these treatments would be expected to provide a beneficial enhanced oxidation rate." *Id.*

The proposed combination of Asakura and Iwasa is improper for at least the following reason. As quoted above, each of claims 1 and 5 recites that a "resin material . . . lacks a surface having prior roughening." Iwasa, in contrast, teaches an etching step to increase fine roughness (i.e., prior roughening), prior to a surface modifying step involving an aqueous ozone solution. See Iwasa, col. 8, lines 60-64. Even if Asakura purportedly did not require "prior roughening" treatment, as asserted at pages 3 and 7 of the Office Action, applying Iwasa's teaching, which concerns a resin material having a roughened surface, to a resin material of Asakura, which allegedly lacks a surface having prior roughening, would not have yielded predictable results to one of ordinary skill in the art. One of ordinary skill in the art, therefore, would not have had any legitimate reason to combine Asakura and Iwasa to arrive at claims 1 and 5.

The proposed combination of Mayne with Asakura and the other references is improper for at least the following reasons. Mayne neither discloses nor suggests "an organic or inorganic polar solvent other than water," as recited in each of claims 1 and 5, the feature missing from Asakura. Mayne instead discloses simultaneously applying UV light while agitating water to distribute ozone therein. See Mayne, col. 1, lines 55-59. Mayne further discloses several effects of the simultaneous application of UV light and ozone-containing aqueous solution. For example, Mayne teaches that UV light has an incidental heating effect that causes evaporation of some amount of water, which would be offset by the amount of water produced from oxidation of the organic material. See Mayne, col. 4, lines 48-63. The above teachings of Mayne are all associated with water as a solvent. Accordingly, having considered Mayne, one of ordinary skill in the art would not have had any legitimate reason to irradiate UV to a resin material in

contact with an organic or inorganic polar solvent other than water containing ozone, with a reasonable expectation of success.

Furthermore, Mayne teaches a period of 48 to 96 hours for the simultaneous application of UV light and ozone-containing aqueous solution. See Mayne, col. 2, lines 19-21; col. 5, lines 44-45. Asakura, in contrast, teaches a period of 300-1000 seconds for UV treatment. See Asakura, paragraph [0008]. One of ordinary skill in the art would not have had any legitimate reason to apply Mayne's teachings, in which UV treatment lasts for 48-96 hours, to Asakura's much shorter UV treatment of 300-1000 seconds. Nor would one skilled in the art have had any reasonable expectation of success in trying to use such a greatly different treatment period.

Hattori is cited for its alleged disclosure of ethanol. Office Action, pages 4 and 5. Inoue is cited for its alleged disclosure that methanol would be an organic alcohol used for a similar purpose and with an expectation of similar results as ethanol. Office Action, page 6. Without acceding to the Office Action's characterizations of Hattori and Inoue, Applicant submits that one of ordinary skill in the art would not have considered combining the teachings of Hattori and Inoue with Asakura to achieve claims 1 and 5.

This is at least because Hattori discloses using ozone solution in which ozone is dissolved in ethanol only as a treating fluid for sterilization and deodorization of natural rubber products or oxidative decomposition of organic waste fluid. See Hattori, e.g., abstract; paragraph [0003]. Also, Inoue discloses using methanol or ethanol to obtain an oxidizing agent in general. See Inoue, abstract. Neither Hattori nor Inoue, however, discloses or suggests using ozone in such alcohol solvent for a treatment method for electroless plating, not to mention beneficial effects in improving adhesion of an electroless plated coating, as disclosed in the as-filed specification, e.g., paragraph

[0019] and Table 1. One of ordinary skill in the art therefore would have had no legitimate reason, or no motivation, to apply the teachings of Hattori and Inoue to the treatment method for electroless plating, as disclosed in Asakura to arrive at claims 1 and 5.

For at least the foregoing reasons, there is no *prima facie* case of obviousness based on the cited references, viewed alone or in combination. Claims 1 and 5 are allowable over the alleged combination of the cited references.

Claims 2, 3, 6, 7, and 9 depend from claim 1 and claim 5 respectively, and incorporate all of the features of the respective claim from which they depend. Accordingly, claims 2, 3, 6, 7, and 9 are allowable for reasons at least similar to those explained above for their respective base claims.

Each of new claims 10 and 11 recites that “[an] organic polar solvent is selected from the group consisting of N,N-dimethylformaldehyde, N,N-dimethylacetamide, dimethyl sulfoxide, N-methyl-pyrrolidon, hexamethylphosphoramide, formic acid, acetic acid, and mixtures thereof,” which is neither disclosed nor suggested in the cited references, alone or in combination. New claims 10 and 11 also depend from claims 1 and 5, respectively, and incorporate all of the features of the claim they depend from. Because the cited references fail to disclose or suggest all of the features of new claims 10 and 11, these claims also are allowable.

In view of the foregoing amendments and remarks, Applicant respectfully requests reconsideration of this application and timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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